

THE UNIVERSITY OF KANSAS SCIENCE BULLETIN

VOL. XXV]

JUNE 1, 1938

[No. 13

Miscellaneous Notes on Mexican Snakes

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ABSTRACT: The following species of Mexican snakes are discussed: *Loxocemus bicolor* Cope; *Diadophis regalis dougesi* (Villada); *Conopsis frontalis* (Cope); *Xenodon angustirostris* Peters; *Geophis semidoliatus* Duméril and Bibron; *Geophis blanchardi* sp. nov. (related to *dubius* and *chalybaeus*); *Enulius unicolor* (Fischer); *Enulius sumichrasti* Bocourt; *Storeria dekayi* (Holbrook); *Storeria storerioides* (Cope); *Ninia diademata* Baird and Girard; *Chersodromus liebmanni* Reinhardt; *Conophis coneolor* Cope; *Conophis vittatus* Peters; *Tantilla rubra* Cope; *Tantilla bocourti* (Günther); *Tantilla calamarina* Cope; *Stenorhina degenhardti apiata* Cope; *Stenorhina degenhardti quinqueclinata* (Hallowell), *Clelia clelia* (Daudin).

THE following notes are based on specimens collected, for the most part, by the authors, in Mexico.

Loxocemus bicolor Cope

Loxocemus bicolor Cope, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 76 (type description; type locality, La Unión, Salvador).

A single specimen of this species (EHT-HMS No. 4574, 2 mi. north Xaltianguis, Guerrero, Mexico) was collected on the highway at night during a downpour of rain; lights from my car disclosed it crawling across the road.

Rostral large, upturned, part visible above three fourths of the distance from frontal; internasals about half area of prefrontals, narrowed medially; prefrontals bordered by three labials; no loreal, frontal longer than its distance from end of the snout; parietals small, separated posteriorly by an occipital shield; one large preocular broadly in contact with the frontal; a supraocular, small, displaced backwards by the upper extension of the preocular; three post-oculars; temporals 3+6+6+7; upper labials 11.11, the seventh and

eighth on the left side, the sixth, seventh and eighth on the right side are very small, as if the normal scales had segmented since the temporals above them are enlarged; fourth and fifth labial enter orbit; 13, 14, lower labials, three touching the anterior chinshields, which are more than double the size of the second pair; a large scale borders lower labials 4 to 7, inclusive, on left side, broken in two parts on right side; 13 scales between chinshields and first widened ventral; ventrals, 256; subcaudals 44; two pairs of divided preanals; scale formula 44, 36, 34, 34, 28, 26. Dark lavender brown, the head darker; the color likewise darker on the underside of head; ventral surface with considerable brownish pigment, the back part of each ventral light. An anal cream spot; a cream-colored area on snout below nostril.

Diadophis regalis dougesii (Villada)

Diadophis punctatus Dougesii Villada, La Naturaleza, III, 1874-76 (1876), pp. 226-230, pl. (lower figure in color, and A-C). Type description: type locality "potreros de Balbuena" (east of Mexico City).

A single specimen in the collection (EHT-HMS No. 4587 ♀; near Corones, Guanajuato, Aug. 12, 1932. Taylor and Smith). It was taken crawling across the road early in the afternoon.

Ventrals, 203; anal divided; caudals, 49; upper labials, 7-7; lower labials, 8-8; preoculars, 2-2; postoculars, 2-2; temporals, 1+1+1, 1+2+2; labials touch chinshields, 5-5; labials enter eye, 3, 4; scale formula, 21, 17, 17, 15, 15. Measurements (in mm.): Total length, 504; tail, 87; body width, 11; head width, 10; head length, 14.6; parietal length, 6; parietal to tip of snout, 5.6; frontal

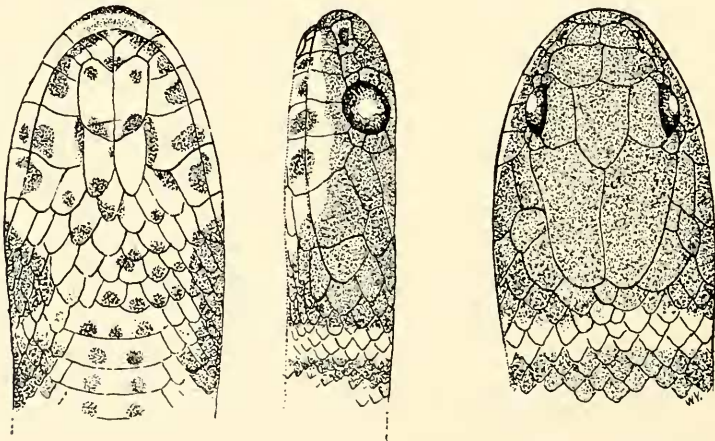


FIG. 1. *Diadophis regalis dougesii* (Villada) EHT-HMS No. 4587; Corones, Guanajuato, Mexico. $\times 3$.

length, 3.8; frontal width, 2.5; diameter of eye, 2.05; eye to nostril, 2.5. Maxillary teeth, 9-10, followed after an interspace by a large solid tooth. Scale preceding anal plate divided.

This form is a much heavier snake than the Arizona form, the head and body are distinctly wider, the head proportionally shorter.

The color is slaty gray to brownish gray, darker posteriorly, each scale with numerous silver flecks when seen under a lens. Head same, but darker; orange neck band about one and one half scale rows wide; outer edge of each ventral blackish, the color extending a third of the way across posterior part of ventrals. Outer row of scales without orange save the first four or five scales; labials with an orange line meeting on snout; many labials with spots or dark edges; chin and ventral surface orange with numerous small black spots, usually two on each ventral besides larger ones on outer edge of scale; under tail red-orange.

This specimen has nearly the same ventral count as that given for the type (202); the number of caudals is larger since the tail of the type specimen is incomplete. The type measured 650 mm. in length; the width of the body is 15 mm.

Conopsis frontalis (Cope).

(Plate XXIII, fig. 3)

Toluca frontalis Cope, Proc. Acad. Nat. Sci. Philadelphia, 1864, p. 167 (type description; type locality, Colima).

Ficimia olivacea (part.) Peters, Mon. Akad. Wiss. Berlin, 1869, p. 875.

Geagras frontalis Cope, Journ. Acad. Nat. Sci. Philadelphia, (2), VIII, 1876, p. 142 (States: "*Toluca frontalis* Cope, from Colima, is congeneric with this species [*Geagras redimitus*] in all technical characters."); Amer. Nat., 1884, p. 163; Bull. U. S. Nat. Mus., No. 32, 1887, p. 82 (Colima and Guadalajara).

Ficimia frontalis Garman, Mem. Mus. Comp. Zoöl. Harvard, VIII, No. 3, 1883, p. 82.

Pseudoficimia pulchra Bocourt, Mission Scientifique au Mexique et dans l'Amérique Centrale, Rept. Livr. 9, 1883, pp. 572-573, pl. XXXV, fig. 12, and 12a-12e (type description; type locality, "Mexique").

Pseudoficimia frontalis Günther, Biologia Centrali-Americana, Reptiles and Batrachia, May, 1893, p. 96 (Ventanas, Durango, and Presidio, Sinaloa); Cope, Ann. Rept. U. S. Nat. Mus., 1898 (1900), pp. 945-946.

Contia frontalis Boulenger, Cat. Snakes British Mus., 2d Ed. 1894, p. 270; Werner, Zoöl. Jahrb., 57, 1929, pp. 147, 149.

Conopsis frontalis Amaral, Mem. Inst. Butantan, IV, 1929, p. 182.

From the above synonymy it is obvious that opinions as to the generic relationship of this species have differed. The most reasonable association is with *Conopsis*, since its most closely related species is *Conopsis nasus*.

Two specimens of this form (EHT-HMS, 5203, 5204) were collected at Hacienda El Sabino, about 25 km. south of Uruapan, Michoacán, by Don Julio Raymond Bresson, who presented the specimens to Smith.

The following data are from Nos. 5203 ♀ and 5204 ♂, respectively. Scale formula, 22, 17, 15, 17; 28, 17, 17, 17; ventrals, 163, 158; subcaudals, 34, 39; upper labials, 7-7, 7-7; lower labials, 7-7, 7-7; temporals, both 1+2+3; preoculars, 1-1, 1-1; postoculars, 1-1, 1-1; anal divided; labials touch chinshields, 3-3; 3-3; total length, 517, 450 mm.; tail, 72, 73 mm.; frontal, length, width, 6.4×4.3, 5.6×3.8 mm.; parietals, length, width, 6.5×5; 5.9×4 mm.; frontal to end of snout, 6, 5 mm.; rostral visible above, 2.4, 2 mm.; eye diameter, 2.8, 2.8; eye to nostril, 3.9, 3.7. Spots on body, 40, 36; on tail, 12, 13.

The nasal is divided below the nostril only; fourteen maxillary teeth, the outer faces showing slight groove-like depressions. Ground color grayish-brown with a narrow, median, cream line interrupted by the darker brown, blackish-edged spots, the outer edges of which extend as narrow vertical lines to the third scale row; two rows of small, black flecks on first and second scale rows; below, cream; yellow on throat. A few subcaudals blackish.

Xenodon angustirostris Peters

(Plate XXIII, fig. 4)

Xenodon angustirostris Peters, Monatsb. Akad. Wiss. Berlin, 1864, p. 390 (type description; type locality, Veragua, Guatemala); idem. 1873, p. 607 (three specimens "Camaron, Provinz Chirique"); Cope, Journ. Acad. Nat. Sci. Philadelphia, (2), VIII, 1876, p. 141 (Sipurio, Costa Rica), p. 157 (Camp Mary Caretta, Nicaragua); and Bull. U. S. Nat. Mus., No. 32, 1887, p. 76; Günther, Biologia Centrali-Americana, Rept. Batr., Feb. 1894, p. 114.

Xenodon sp. Müller, Verh. Nat. Ges. Basel VI, 1878, pp. 663-666 "Costa grande gegend von Mazatenago, Guatemala."

Xenodon rhabdocephalus (part.) Günther, Biologia Centrali-Americana, Rept. Batr., Feb. 1894, p. 114, Amula, Guerrero; British Honduras; San Gerónimo, Guatemala; Gadow, Proc. Zool. Soc. London, June 6, 1905, p. 233.

Xenodon colubrinus Boulenger, Cat. Snakes British Mus., 2d Ed., II, 1894, pp. 146, 147, (part.); Stuart, Mus. Zool. U. of Michigan, Misc. Publ., No. 29, Oct. 1, 1935 (3 spec. La Libertad, Guatemala).

Ophis (= *Xenodon*) *colubrinus* Wettstein, Sitz. Akad. Wiss. Wien, abt. 1, 143 Bd. ½ Heft, 1934, p. 35 (Costa Rica).

We are uncertain as to what name is the proper one to apply to the species of *Xenodon* occurring in Mexico. Günther *loc. cit.* (Feb. 1894) placed specimens from Guatemala, British Honduras and Mexico under the name *Xenodon rhabdocephalus* Wied, and recognized *Xenodon angustirostris* Peters as a distinct species without having seen a specimen. He believed that *Xenodon bertholdi* figured by Jan (*loc. cit.*) is not from Mexico, but from Brazil, and identical with *Xenodon colubrinus* Günther.

Boulenger, 1894, referred *Xenodon rhabdocephalus* (part.) Günther, *bertholdi* Jan, *angustirostris* Peters and *bipraeocularis* Cope to the synonymy of *Xenodon colubrinus* Günther, referring to it sixteen

specimens from localities ranging from Para, Brazil, to Amula, Guerrero, Mexico.

Cope (1876, *loc. cit.*) referred specimens from Central America to *Xenodon angustirostris* Peters (as did Bocourt, *loc. cit.*). He regarded this form as a subspecies of *Xenodon severus* Linné.

Schmidt (Smithsonian Misc. Coll., 89 No. 1, 1933, p. 16) referred Panama specimens, which he examined, to *Xenodon colubrinus*. These specimens, four females have combined ventral—subcaudal counts ranging from 191 to 198; Boulenger's specimens from Panama have totals of 193; his specimens from Columbia range from 190 to 202. Stuart (*loc. cit.*) referred three specimens from La Libertad, Peten, Guatemala, to the same species. These specimens have total counts of 167 and 171.

Granted that specimens from Panama and Columbia are correctly referred to *colubrinus*, we find that the total counts range from 190 to 202, with an average of 194. Those from localities to the north of Panama vary between 167 and 188, the average being 175. The type of *Xenodon angustirostris* has a total count of 188 and is approached by a specimen from Guatemala with 183. *X. bertholdi* is probably a distinct species.

Of the specimens listed by Boulenger and Schmidt, all are young or females. Stuart lists two males, one of which has the lowest ventral count (124) and at the same time the lowest ventral-subcaudal count (167); the ventral count for the second male is 125 (subcaudal count not given).

A single specimen in our collection was collected by Dyfrig McH. Forbes at Potrero Viejo, near Córdoba, Veraacruz, Mexico, and is, we believe, the most northern record. This specimen (No. 5207 ♀) yields the following data: Scale formula, 23-19-19-17; ventrals, 123; anal, single; subcaudals, 35; preoculars, 1-2; postoculars, 2-2; temporals, 1+2+4; four labials touch the first chinshields, which are much larger than the posterior; 15 broad bands on body, 3 on tail; frontal length, 5.8 mm.; width, 5.5 mm.; parietal length, 6.9 mm.; width, 5.7 mm.; frontal to tip of snout, 8 mm.; prefrontal length, 4 mm.; width, 4.2 mm.; portion of rostral visible above one third of distance from frontal to tip of snout.

The color is grayish since the scales have been shed, the edges of the spots nearly black, while the areas between the spots are dove gray; chin yellowish; underside of tail unspotted. Belly dull cream, flecked with very numerous ashy-brown spots; on outer edge of ven-

trials a very indistinct row of cream spots separated by darker coloration. The figure (Pl. 23, fig. 4) shows arrangement of the markings.

We are, at least temporarily, considering this Mexican *Xenodon* under the name *angustirostris* Peters, despite the fact that it has a considerably smaller count of ventrals and subcaudals.

Geophis semidoliatus Duméril and Bibron

Eighteen specimens, three from Córdoba, Veracruz (Nos. 5154-6, collected by H. R. Roberts) and fifteen from Tlilapam, Veracruz (Nos. 5157-71, collected by E. H. Taylor).

The specimens present the following variation in scutellation: dorsal scales smooth in both sexes, in 15-15-15 rows; ventrals, 136 to 157 in males, 144 to 169 in females; subcaudals, 22 to 25 in females, 23 to 28 in males. Five supralabials (four on both sides of one, in which the fourth and fifth are fused); six infralabials; third supralabial enters eye; no preocular; postoculars, 1-1; supraocular present, small; two pairs of genials, the anterior much the larger; anal entire.

The dark bands on the body (excluding head) vary between 17 and 32 in number; four to six are present on the tail. In most specimens two or more of the bands are fused on the middorsal line; in some as many as six consecutive bands are fused. The dark bars are usually three or four scales long, and extend laterally a varying distance—in some specimens, terminating on the fourth scale row, but usually on the first or second; none of the bands extend onto the ventral surface; they are separated on the middorsal line usually by a width of two scales, laterally by a width of three or four. The dark bands are ultramarine in young specimens, and the interspaces are pink (*vide* E. H. Taylor's field notes), while in larger specimens the bands are very dark blue-black, the interspaces orange-red.

The light band across the temporal and parietal regions varies in width from one fifth to three fourths the length of a parietal; the broader bands have concave anterior edges.

The specimens agree with Boulenger's description (Cat. Snakes Brit. Mus., II, 1894) except that the minimum in ventral and caudal scale counts is lower and the maximum ventral count is less than indicated by that author. The first maxillary tooth is posterior to the naris, about on a level with posterior edge of the nasal.

Measurements (in mm.) and scale counts of *Geophis scmidoliatius*

NUMBER.	Sex.	Ventrals.	Caudals.	Total length.	Tail length.
5171.....	♂	136	24	126	14.0
5165.....	♂	139	25	138	14.3
5164.....	♂	141	28	157	17.2
5160.....	♂	139	23	161	16.0
5162.....	♂	148	25	167.5	17.5
5169.....	♂	146	28	251	30.5
5154.....	♂	157	26	257	26.0
5166.....	♂	145	25	269	28.0
5163.....	♂	144	22	123	12.0
5167.....	♂	154	22	129	12.1
5157.....	♀	159	23	131	12.0
5170.....	♀	161	22	158	14.1
5156.....	♀	168	24	160.5	13.2
5155.....	♀	169	22	169	14.0
5158.....	♀	157	24	266	25.0
5168.....	♀	152	25	287	29.5
5159.....	♀	152	23	295	27.0
5161.....	♀	159	23	310	25.6

Geophis blanchardi sp. nov.

Holotype. EHT-HMS. No. 5194; collected about two miles southwest of Acultzingo, Veraacruz, Aug. 14, 1936, by E. H. Taylor.

Paratypes. EHT-HMS, Nos. 5479-5483; topotypes.

Diagnosis. A small snake, grayish-blue above, black and orange below. Internasals and prefrontals distinct; nasal divided; an elongate loreal; no preocular; small supraocular; one postocular; fifth labial broadly in contact with the parietal; one large temporal; ventrals, 155-162, and undivided; 30-40 subcaudals.

Description of type. Rostral small, not reaching the dorsal surface of the head, distinctly broader than high; internasals small, broader than long, one third to one fourth the size of the prefrontals; the combined width equal about one half of the width of the prefrontals in front of eye, the suture between them equal to half of that between the prefrontals; prefrontals very large, entering the eye; frontal four-sided, the anterior angle very obtuse, the sides converge to form a posterior angle little less than a right angle; frontal longer than its distance from the tip of the snout; supra-

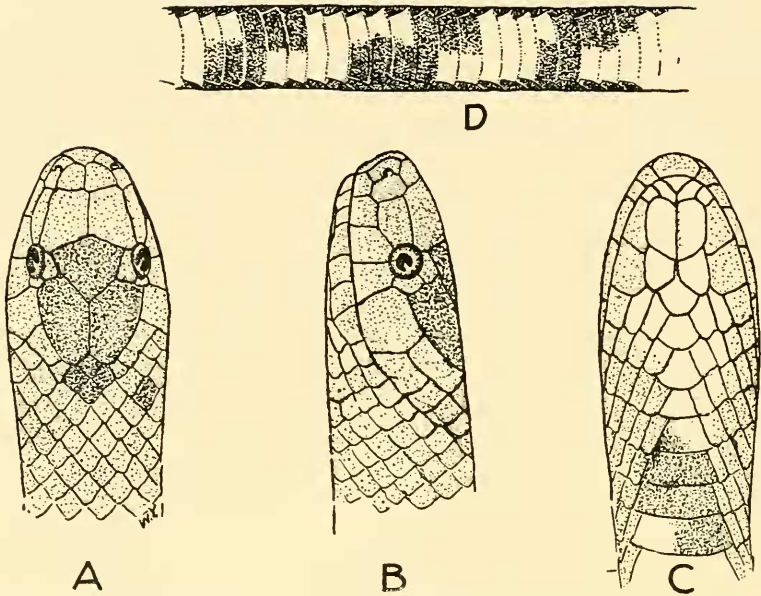


FIG. 2. *Geophis blanchardi* sp. nov. EHT-HMS, No. 5194; type, Acultzingo, Veracruz. Actual width of head, 6 mm.

oculars small, triangular, scarcely larger than the postocular; parietals elongate, longer than their distance from the tip of the snout; nasal divided into two pieces of nearly equal area, the nostril in the anterior; loreal much elongated, its length nearly twice its width; eye small, little more than half the length of loreal; six upper labials in the following ascending order of size: 1, 2, 4, 3, 6, 5, the fifth far the largest, broadly in contact with the parietal; the third and fourth enter orbit; a single elongate temporal behind the fifth labial; mental broader than long, not as wide as rostral; first pair of chinshields much larger than posterior; first four ventrals small, equal-sized, the first touching the second pair of chinshields, seven lower labials in the following order of size: 2, 7, 6, 1, 5, 3, 4; three lower labials touch first chinshield; scale formula, 17-17-17; ventrals, 162, anal single; subcaudals (paired), 130; total length, 388 mm.; tail, 46 mm.; head width, 6 mm.; head length, 10 mm.; head to end of parietal, 9 mm.

Color. Above gray-blue to blackish (where scales are shed). Below deep orange and black, the black color forming angular spots with an average length of three scales; these reach the middle of belly and usually alternate with an orange spot of about equal

size; occasionally the black spots form a band across belly; chin and neck (below) orange; lip ultramarine; a whitish spot on the edge of fourth labial.

Remarks. The relationship is with *Geophis chalybaea* and *Geophis dubius*. From the former it differs in the entirely different ventral coloration and in having a larger series of ventral scales; from *G. dubius* it differs in having a single postocular, a different lateral and ventral coloration, and a smaller series of subcaudals.

The species is named for the late Dr. Frank Blanchard in memory of his excellent contributions to American herpetology.

Enulius unicolor (Fischer)

Geophis unicolor Fisher, Abh. d. naturwiss. Vereines zu Bremen, vol. 7, 1881, p. 227 (type locality, "Mexico").

Leptocalamus unicolor Cope, Proc. Amer. Philos. Soc., vol. 22, 1885, p. 178; Günther, Biol. Cent. Amer., Rept. and Amph., 1893, p. 100.

Two specimens, both females, are available, one (No. 5237) collected four miles south of Cuernavaca, Morelos, the other (No. 5238) collected twelve miles south of Puente de Ixtla, in Guerrero.

The dorsal scales are in 17 rows; ventrals and caudals, respectively, 192 and 93 in No. 5238, 200 and 102 in No. 5237. Third and fourth supralabials enter eye; seven supra- and seven infralabials; no preocular; two postoculars; temporals, 1-2-3; three scales between the single pair of enlarged chinshields and first enlarged ventral; anal divided; scale preceding anal also divided; total length and tail length, respectively, 300 mm. and 93 mm. in No. 5238, 164 mm. and 46 mm. in 5237.

Dorsal color, light tan in the larger specimen, very slightly darker medially, the color reaching to the second scale row. In the smaller specimen the ground color is dark olive. Belly white in both specimens.

Both specimens were found under stones.

Dr. E. R. Dunn (*in litt.*) has called our attention to the fact that *Enulius** has priority over *Leptocalamus*.†

Enulius sumichrasti Bocourt

Enulius sumichrasti Bocourt, Miss. Sci. Mex., Rept., Livr. 9, 1883, p. 538, pl. 31, fig. 6 (type locality, "Isthmus of Tehuantepec"); Boulenger, Cat. Snakes Brit. Mus., II, 1894, p. 250; Werner, Zool. Jahrb., vol. 57, 1929, p. 143.

Enulius murinus Bocourt, Miss. Sci. Mex., Rept., Livr. 9, 1883, p. 537, pl. 35, fig. 6 (Tehuantepec specimens).

Geagras longicaudatus Cope, Amer. Nat., 1884, p. 162 (new name for *Enulius murinus* Bocourt).

* Cope, Proc. Amer. Philos. Soc., vol. 11, 1871, p. 558 (type *murinus*, from Chinandega, Nicaragua).

† Günther, Ann. Mag. Nat. Hist., Ser. 4, vol. 9, 1872, p. 17 (type *torquatus*, presumably from South America).

One female specimen (No. 4560) was collected at night along the railroad about a kilometer from Tonalá, Chiapas.

Dorsal scales in 17 rows; ventrals, 197; tail broken; third and fourth supraoculars enter eye on one side, third only on the other; 6-7 supralabials; 7-7 infralabials; no preocular; two postoculars; temporals, 1-2-3; two or three scales between single pair of chinshields and first enlarged ventral; one loreal; anal divided, preceding scale entire; 262 mm. snout to vent.

Dorsal color dark tan, reaching to second scale row; a faint, narrow, median dorsal line of darker brown; belly, cream.

E. sumichrasti differs from the specimens referred to *unicolor* in the character of the rostral and in the shape of the frontal and prefrontals. In *unicolor* the rostral is but very slightly produced, and somewhat narrower as seen from the ventral surface. The lateral edge of the rostral is anterior to the suture between the second and third infralabial in *unicolor*, about even with the middle of the third infralabial in *sumichrasti*. In the latter species the rostral is distinctly produced anteriorly, projecting beyond the mental a distance slightly less than that between the posterior median edge of the chinshields and the median labial border of the mental. In *unicolor* the length of the rostral on the median ventral line is equal to the distance between the posterior median edge of the first infralabials and the median labial border of the mental. In the latter species, the angle between the anterior and lateral edges of the prefrontals is about 90 degrees; in *sumichrasti* the angle is considerably greater, and as a result the prefrontals are not so wide at the side as in *unicolor*. In *sumichrasti* the anterior edge of the frontal is slightly convex, while in *unicolor* it is strongly convex. The frontal is proportionately shorter in *sumichrasti*, its length not equaling its distance from the tip of the snout.

In *unicolor* the snout, in lateral profile, is distinctly down-curved, while in *sumichrasti* it more nearly approaches a straight line.

Fischer's description (*loc. cit.*) of *unicolor* is inadequate for certain identification of his species; however, the figures accompanying the description, while poor, show in general the features characteristic of the specimens here referred to *unicolor*.

E. sumichrasti was described by Bocourt as having a preocular, which character served as the basis for separation from *murinus* Bocourt (*longicaudatus* Cope, a substitute name for *murinus* Bocourt, which was stated to lack grooved teeth, present in *murinus* Cope according to Cope). However, it appears that *sumichrasti* and *longicaudatus* are synonymous, as the presence or absence of a

preocular is a variable character according to Dr. E. R. Dunn (*in litt.*), who states that it occurs on one or both sides of specimens from Mexico, Panamá and South America. *E. sumichrasti* has priority over *E. longicaudatus*.

That *sumichrasti* is distinct from *murinus* Cope (type locality Chinandega, Nicaragua) is indicated by information from Doctor Dunn (*in litt.*), who states that the two cotypes of *murinus*, and the one other existing specimen from Nicaragua, have a light nuchal collar, lacking in both *sumichrasti* and *unicolor*.

Storeria dekayi (Holbrook)

Three specimens (Nos. 4662-4), all from a locality five miles south of Valles, San Luis Potosí. All were found in piles of driftwood near a river bank.

Third and fourth supralabials enter eye; supralabials 7-7 in two, 6-7 in one (sixth and seventh supralabials fused on one side); infralabials 7-7; postoculars 2-2 in two, 3-4 in one; one preocular; loreal absent; anal divided; no scales between chinshields and first enlarged ventral.

Measurements (in mm.) and scale counts of *Storeria dekayi*

NUMBER.	Sex.	Ventrals.	Caudals.	Total length.	Tail length.
4663.....	♀	141	49	355	70
4664.....	♂	137	57	288	70
4662.....	♂	141	59	311	72

Storeria storerioides (Cope)

Ten specimens, from the following localities: Tres Cumbres (Tres Marias), Morelos (No. 4665); Zempoala Lake, near Tres Cumbres, Morelos (Nos. 5350-1); Desierto de los Leones, Distrito Federal (Nos. 5354-5); Rio Frio, Puebla (No. 5403); 57 kilometers southeast of Mexico City, on road to Puebla (No. 5352); 66 kilometers southeast of Mexico City, on road to Puebla (No. 5353); two miles south of San Martín, Mexico, near Zitácuaro, Michoacán (No. 5404). One specimen lacks locality data. All were found at elevations between 9,000 and 10,000 feet above sea level, in pine forests. One was found under a log, the remainder crawling about on the ground.

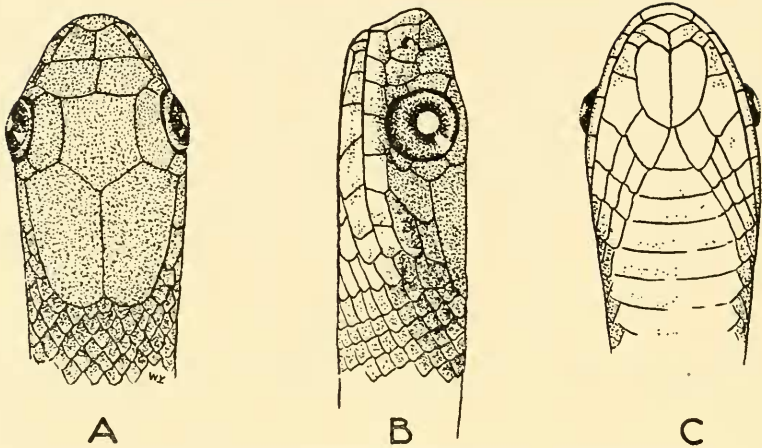


FIG. 3. *Storeria storcrioides* (Cope) EHT-HMS, No. 5404; near Zitácuaro, Michoacán, in Mexico. $\times 5$.

Scale rows 15-15-15; third and fourth supralabials entering eye, except on one side in one, in which the third only enters the eye; supralabials 7-7 in six, 6-6 in two, 5-7 in one, 7-8 in one; three preoculars, on one side in one, two in others; postoculars, 2-2 in eight, 2-3 in one, 3-3 in one; temporals, 1-1-1 in one (sides counted separately), 1-2-1 in one, 1-2-2 in ten, 1-3-2 in one, 1-2-3 in six, 1-3-3 in one; one loreal, entering orbit between preoculars on one side in one, separated from orbit in others; anal divided; second, third and fourth subcaudals entire in one specimen, remainder divided. The nasal is divided below the naris in all specimens, and is divided above the naris (apparently) in three. In eight specimens the angle formed by the two posterior sides of the frontal is 90 degrees or less, and the frontal extends posterior to a line between the posterior edges of the supraoculars. In two specimens the angle formed by the two posterior edges of the frontal is about 110 degrees, and the frontal extends posteriorly only to a line between the posterior edges of the supraoculars.

One specimen, the smallest examined (No. 5404), has the scales of the lateral row of dorsals keeled. This specimen exhibits several other variations, such as a divided nasal, a short, broad frontal with an obtuse posterior angle, and the first enlarged ventral in contact with the posterior pair of chinshields (separated by one scale in others), some of which may be due to its immaturity.

In coloration, the specimens agree with descriptions published.

It may be added that an irregular, narrow, reddish-brown band extends the length of the body on the middorsal line.

Measurements (in mm.) and scale counts of *Storeria storerioides*

NUMBER.	Sex.	Ventrals.	Caudals.	Total length.	Tail length.
4665.....	♀	131	47	127	26.5
5350.....	♀	45	236	47.0
5354.....	♀	132	46	255	50.0
5403.....	♀	129	46	259	52.0
5404.....	♂	131	51	110	23.7
5352.....	♂	130	49	137	29.5
5353.....	♂	129	50	140	31.0
5356.....	♂	130	50	172	39.0
5351.....	♂	131	53	222	51.5
5355.....	♂	130	51	288	64.0

Chersodromus liebmanni Reinhardt

Chersodromus Liebmanni Reinhardt, Vid. Meddel. Naturh. Forén. Kjøbenhavn, 1860, pp. 243-245, Plate IV, figs. 10, 11 (type description; type locality, México).

A single specimen of this species EHT-HMS. No. 4564, was collected in a coffee plantation, 10 mi. E. of Cordova, Veracruz, July 23, 1932 (Taylor), from under a small rotten log. From under a fallen banana stem contiguous to this log was captured at the same time a specimen of *Ninia diademata* Baird and Girard. These two snakes bear a very strong superficial resemblance to each other. Both are black with yellow collars, their bodies nearly of the same thickness. Actually they are very different.

The following data are taken from No. 4564: Ventrals, 135; anal, entire; subcaudals, 34; supralabials, 7-7; lower labials, 8-8; preocular, 0-0; loreal, 1-1; postocular, fused with supraocular; temporals, 1-2; total length, 199; tail, 33.

Supranasals wider than long; prefrontals completely fused; frontal more or less triangular, as wide as long, as long as its distance from tip of snout, shorter than the parietals; nasal divided nearly equally, the nostril lying between; rostral barely visible above; five labials touch the very large anterior chinshields which are very much larger than posterior; the first labials not in contact; scale formula, 18-17-17-17. Scales are keeled dorsally, dimly anteriorly,

then becoming stronger and more evident posteriorly; the outer scale row much enlarged.

The type has 130 ventrals; subcaudals, 42; its length is 250 mm.

Ninia diademata Baird and Girard

Ninia diademata Baird and Girard, Catalogue of North America Reptiles, Part I, Serpents, 1853, p. 49. (Type description; type locality, Orizaba, Mex. Jas. Fairie coll.)

A single specimen (EHT-HMS No. 4565 ♂) was collected in a coffee plantation 10 mi. E. of Cordova, Veracruz, July 23, 1932 (Taylor), from under a banana stem, as mentioned in the discussion of *Chersodromus liebmanni*.

The following characters are evident: Ventrals, 143; subcaudals, 96; upper labials, 6-6; lower labials, 6-6; preoculars, 0-0; postoculars, 2-2; temporals, 1 + 2; scales touch chinshields, 4-4; anal, undivided; total length, 268 mm., tail, 92 mm. Rostral barely visible above; internasals about one third size of the prefrontals; latter large, entering the eye above the loreal; frontal hexagonal, as wide as long, minutely longer than its distance to tip of snout; parietals longer than frontal, equal to or a little greater than their distance from snout tip; nasal divided; loreal rectangular, entering the eye; first chinshields double size of second pair; scales very heavily keeled and striated, the formula 21-19-19-19. Outer row rather large; the others become smaller towards middle of back.

This specimen differs from the type in the absence of preoculars, and in having the prefrontals enter the orbit. It is presumed that the species is variable in these characters. So far as I can find other specimens referred to this form do not agree with the type.

The coloration is typical; the black median ventral line occupies as much area as the cream lines bordering it. Outer edges of the ventrals black.

Conophis vittatus Peters.

(Plate XXIII, fig. 1)

Conophis vittatus Peters, Monatsb. Akad. Wiss. Berlin, Oct., 1860, pp. 519-520; Pl., fig. 3; (type description; type locality uncertain): "Diese Schlange wurde bei einem Händler in Hamburg gekauft, welcher mir erzählte, dass sie nicht weit von Neu-Orleans in Mississippi mit einem treibenden Strohhausen auf ein Schiff gezogen sei."

Four specimens were taken; EHT-HMS Nos. 5149, 5150, 12 mi. S. Puente de Ixtla, Morelos, km. 133, July 14, 1936, and Aug. 1, 1936; No. 5152, km. 350, between Rincon and Cajones, Guerrero, July 24, 1936; No. 5151 Xaltianguis, Guerrero, July 27, 1936 (km. 405); Taylor collector.

The color pattern in the specimen figured is also that of the

other three specimens. The ground color is light olive or yellowish-brown. Data here given are from Nos. 5149 ♀; 5150 ♂; 5151 ♂; 5152 ♂, respectively:

Scale formula, 29, 19, 19, 17; 28, 19, 17, 17; 26, 19, 17, 17; 29, 19, 19, 17; ventrals, 165, 163, 162, 160; subcaudals, 48, 59, 70, 67; upper labials, all 7-7; lower labials, 9-9, 10-9, 9-9, 9-9; chinshields of equal length; four scales touch chinshields. Measurements in millimeters: Total length, 500, 561, 522, 552; tails, 77, 110, 133, 117; head width, 13, 12.4, 13, 13; head length, 14.2, 20, 20, 19.

One of us (Taylor) was bitten by No. 5151 on the middle joint of the third finger. Pain and swelling ensued which lasted for some time. A year and a half after the occurrence finds the digit still somewhat weak, and slightly painful when bent.

Conopsis concolor Cope

Conopsis concolor Cope, Proc. Acad. Sci. Philadelphia 1866, p. 318 (type description; type locality, Mexico).

H. M. Smith obtained a single specimen at Chichen Itza, Aug. 26, 1936 (EHT-HMS No. 11635). It differs from the type description in being rather olive brown. Paired dotted lines appear on back of head and for about an inch on the neck. The black stripe through the eye continues as a dim, dotted line for an inch on the neck; a dim, lighter line is suggested between first and second scale rows. Chin dark with yellow spots on posterior lower labials; upper labials with a cream line. Further data on this specimen is given elsewhere (Smith, this journal).

Tantilla rubra Cope

Tantilla rubra Cope, Journ. Acad. Nat. Sci. Philadelphia (2) VIII, 1876, p. 144 (type description; type locality, Japan, Tehuantepec, Dr. Sumichrast coll.).

This species is represented by three specimens, EHT-HMS Nos. 5240 ♂ (Radcliffe Roberts); 5241 ♀, 5242 ♂ (Taylor) from Km. 226, 22 km. N. W. of Tehuacán Puebla. Scale formula, 16-15-15, 15-15-15, 15-15-15; ventrals, 154, 156, 160; subcaudals, 66, 62, 60; upper labials, all 7-7; lower labials, all 6-6; preoculars, all 1-1; postoculars, all 2-2; temporals, all 1 + (the second lower temporal is behind last labial).

Measurements (in mm.): Total length, 348, 320, 231; tail, 88, 80, 54; head length, 11.4, 10, 9; head width, 6.5, 6, 5.7.

Superficially this species bears a rather close resemblance to *Tantilla bocourti*, but the details of the head coloration differ. The head, likewise, is black generally; the black and yellow nuchal

collars are much the same, save that the yellow collar encroaches more on the parietals; behind the eye is a more or less rounded spot of yellow, the lower border of which is formed by the black spots on the lower labials; tip of snout yellowish, with small black spots in front of nostrils and one on rostral; sometimes small spots on the outer part of the internasals.

In life the color is a light shade of brownish-red, becoming faun color in alcohol. These specimens were obtained from under cactus plants. Minute pits, comparable to apical pits of other genera, are present on the scales of this species back from the tip of the scales near the middle. These cannot be seen unless a strong lens is used.

Tantilla bocourti (Günther)

Homalocranium bocourti Günther, *Biologia Centrali Americana*; Reptiles, Batrachians, Jan., 1895, p. 149; (type description; type locality, "Guanajuato."); Taylor. *Trans. Kansas Academy of Science*, 39, 1936, pp. 336-337, fig. 1.

Five specimens are at hand: EHT-HMS, No. 5239 ♂ Cuernavaca, Morelos; Taylor, July 12, 1936, Nos. 2245 ♀, 2244 ♂, at km. 226, 22 km.; N. W. Tehuacán, Puebla; Taylor, Aug. 23, 1936, Nos. 14430 ♂, 14431 ♀, Cuernavaca, Morelos; H. M. Smith, Oct. 17, 1936.

The ventral and subcaudal counts of these specimens are, respectively, 174, 57; 173, 46; 164, 58; 177, 54; 185, 47. The specimens from Cuernavaca are generally darker than those from Tehuacán, and with a higher ventral-subcaudal count. From data here given, and published data, the following ventral-subcaudal counts obtain. The type has a total count of 227 (Guanajuato); Magdalena, Jalisco, 228-238; Cuernavaca Morelos, 231-234; Tehuacán, Puebla, Acultzingo, Veracruz, 219-221. An east-west range of from 238 to 219 is discernible.

Tantilla calamarina Cope

Tantilla calamarina Cope, *Proc. Acad. Nat. Sci. Philadelphia*, 1866, p. 320; (type description; type locality, Guadalajara). Taylor, *Trans. Kansas Acad. Sci.* 39, 1936, pp. 346-347, fig. 5.

A specimen collected four miles S. Cuernavaca (EHT-HMS No. 5243 ♀) has a broader head than the specimen from Queseria, Colima, figured by Taylor, *loc. cit.* Ventrals, 130; subcaudals, 27; upper labials, 6-6; lower labials, 6-6; preoculars, 1-1; postoculars, 1-1. Temporals, 1 + 2; mental touches chinshields; temporal in contact on both sides with the postocular. Total length, 202 mm.; tail, 27 mm.

Three dim, blackish stripes, one median, the outer on third and fourth scale rows, the space between forming slightly lighter lines.

Stenorhina degenhardti quinquelineata (Hallowell).

(Plate XXIII, fig. 2)

Microphis quinquelineata Hallowell, Proc. Acad. Nat. Sci. Philadelphia, 1854, p. 97; (type description; type locality, Honduras).

A specimen (EHT-HMS, No. 4567 ♀, Totolapam, Oaxaca, Aug. 6, 1935, H. M. Smith) of a form agreeing in detail with the characters given (and figured) for *quinquelineata* by Hallowell, causes me to resurrect Hallowell's name. It differs from *fremenvillei* in having a broad median black line, and two narrow, lateral black lines on each side; the ground color between the dark lines is a putty-gray, the edges of the scales slightly darker. Between the median and upper lateral lines is an indistinct dotted, dark line; below uniform yellow. The lips are bright yellow, without spotting.

Compared with the form *apiata* this snake has a shorter snout, the prefrontals and internasals distinctly shorter; the snout is actually broader; and the frontal is narrower and more elongate.

The specimen presents the following characters: Ventrals, 175; caudals, 34; scale formula, 24, 17, 17, 17; upper labials, 7-7; lower labials, 7-7; 3 labials touch anterior chinshields; one labial touches second chinshields; 3d and 4th labials enter eye; part of rostral visible above, equal to three fourths its distance from the frontal; latter elongate a third longer than its distance from the end of the snout; outer anterior corner of the parietals segmented, forming a second anterior "temporal"; diameter of eye equals the distance to nostril (in *apiata* much less); nasal segmented, the anterior moiety fused with the internasals; loreal wanting; preocular touching posterior nasal; 1 preocular, two postoculars; temporals, 2-2.

Total length, 465 mm.; tail, 60 mm.; head width, 11 mm.; head length, 15 mm.

Stenorhina degenhardti apiata Cope

Stenorhina degenhardti apiata Cope, Journal Acad. Nat. Sci. Philadelphia, (2) VIII, p. 142; (type description; type locality, Tehuántepec) Sumichrast, collector.

This form is represented by a specimen (EHT-HMS, No. 5153) collected five miles north of Acapulco at Puerto Crucita. The specimen was bright pinkish-red above; the ventral surface of a similar color, but of a lighter shade. There is an indistinct dark line behind eye, and a trace of a median dorsal line on the neck. In alcohol the snake has become light brown, and where the scales are

lost it is nearly flesh color. The upper labials are bright yellow, the chin and lower labials creamy-yellow. Scale formula, 24, 17, 17, 17.

The accompanying figure shows scale relationships. Ventrals, 172; subcaudals, 32; anal divided; total length, 490 mm.; tail, 65 mm.; head width, 10 mm.; length, 15.2 mm.

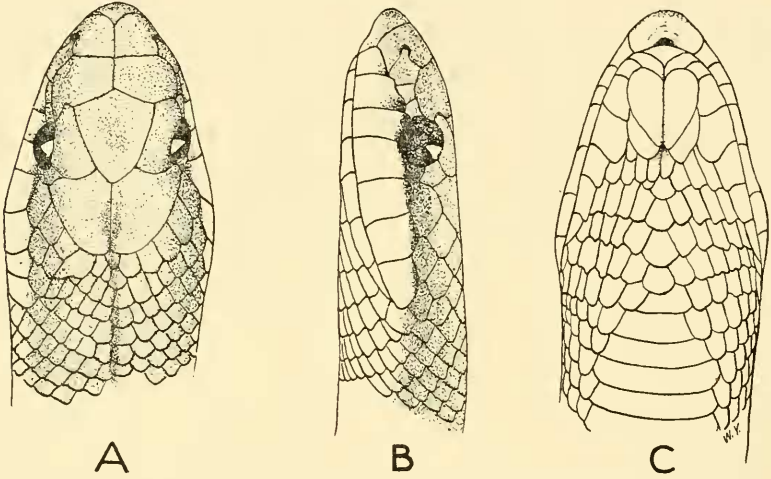


FIG. 4. *Stenorhina degenhardti apiata* (Cope). EHT-HMS, No. 5153; five miles north of Acapulco. Actual head width, 10 mm.

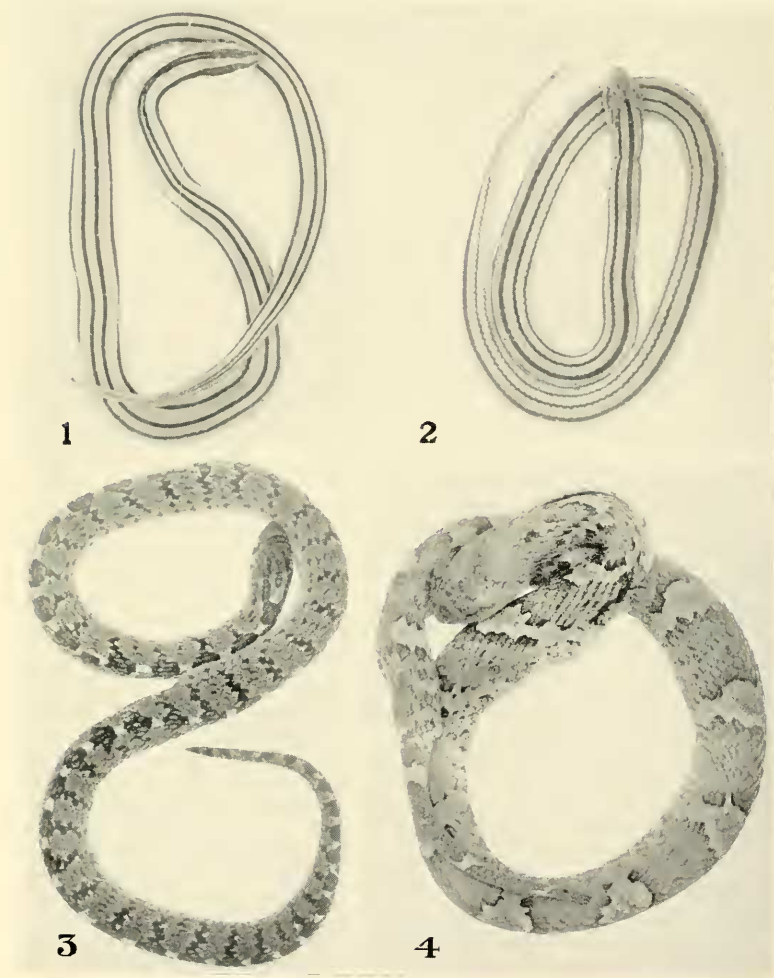


PLATE XXIII

FIG. 1. *Conopsis vittatus* Peters. EHT-HMS, No. 5149 ♀; total length, 500 mm.

FIG. 2. *Stenorhina degenhardti quinqueclincata* (Hallowell). EHT-HMS, No. 4567 ♀; total length, 465 mm.

FIG. 3. *Conopsis frontalis* (Cope). EHT-HMS, No. 5203 ♀; total length, 570 mm.

FIG. 4. *Xenodon angustirostris* Peters. EHT-HMS, No. 5207 ♀; total length, 587 mm.

Clelia clelia (Daudin)

Coluber clelia Daudin, Hist. Nat. Gen. Partic. Rept. vol. 6, year XI (1803), pp. 330-331, pl. LXXVIII.

A specimen (EHT-HMS), No. 4568 ♂, was collected by H. M. Smith at Paso del Rio, Colima. Ventrals, 211; caudals, 86; upper labials, 7-7; lower labials, 8-8; preoculars, 1-1; postoculars, 2-2; temporals, 2 + 3; anal single; scale formula, 24, 21, 17, 17, 17; preocular separated from frontal; parietals shorter than their distance to end of snout; frontal about equal to its distance to end of snout. Eye (3 mm.) shorter than distance between eye and nostril (3.6 mm.); loreal higher than long; length, 675 mm.; tail, 147 mm.; head width, 12 mm.; length, 19.6 mm. Head dark violet to violet-black; cream collar behind parietals 4 scale-rows wide; large blackish violet band behind collar.